

ACCU-LABS INC.

4831 S. Whipple Avenue
Chicago IL 60632
Phone: 773.523.3100 Fax: 773.523.4008
www.accu-labs.com

A2LA Accredited ISO/IEC 17025:2005 Certificate # 2558.01

463 GRAIN REFINER *addition agent for copper and brass solutions*

Introduction

Plating from copper and brass solutions can be a challenge. Whereas most cyanide-based solutions are very forgiving, copper and brass are sensitive to low levels of impurities, both organic and inorganic. These contaminants can lead to dull, brownish, streaked plate as well as poor conductivity and slow plating rates. **463 GRAIN REFINER** conditions both anode and cathode, providing the plater with higher production rates and a more attractive finish.

Features and benefits

Liquid product

Improves plate appearance

Improves anode corrosion

Mixes readily

Reduces nickel, buffing requirements

Higher throughput

How to use 463 Grain Refiner

463 GRAIN REFINER mixes directly into your plating solution and should provide immediate results, though in some cases it is better to carbon treat the solution prior to addition; as little as $\frac{1}{2}$ % by volume may show improvement in both anode and cathode appearance. The actual amount required for each solution depends on several factors including the levels of impurities: carbonate, chloride, and organics. 5 % by volume is a maximum concentration. Excess amounts will not hurt the plating solution; however, no benefit will be achieved from extra additions.

Safety, storage, and handling

463 GRAIN REFINER should be stored so that it is not subject to excessive heat. **463 GRAIN REFINER** may cause skin and eye irritation. Use only with suitable protective clothing. Wash thoroughly after using. **463 GRAIN REFINER** is used with solutions which contain cyanide and other toxic chemicals. Refer to Material Safety Data Sheet for more complete information. Handle this and all chemicals with care.

Non-warranty

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